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Clinical Sonography & Telecytology
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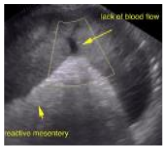
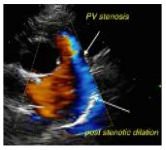
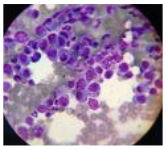
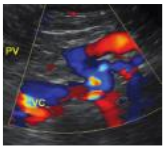





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Miss Abby Neidiger

SPECIES
Feline

BREED
DSH

SEX
Female Spayed

AGE
9 years

WEIGHT
8.5lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Emily Kalenius, DVM

HOSPITAL NAME
Willamette Veterinary Hospital

REFERRING VET
Dr. Kalenius

INVOICE
20780

DATE
8/29/21

PRESENTING CLINICAL SIGNS

History: Gallop rhythm and grade 3-4/6 left parasternal murmur. Vitals wnl, eating some. There is a very slightly abdominal component to her breathing. Lung sounds are normal
Abnormal PE/Chem/CBC/UA Results: Feb creat 1.7 8/27 creat 11.8, bun 116, phos 12, k 4.8, cbc nsf, UA usg 1.018, wbc/rbc 5-10, creat 7.53, bun 97, lytes nsf, pcv/ts 21/6.8 overnight 8/27 to 8/28 FAST - hydronephrosis bilateral, no free fluid, medium to large bladder, left ureter 0.32 cm, right 0.25 cm 2 a ur bladder large rads - bilateral ureteroliths present, no stone present in urethra, possible small stone in bladder EPOC - hct 18, bicarb 14.9, hypocalcemia 1.16, creat 6.42 (last 7.53), hypokalemia 3.3, bun 72 (last 97) 8/28/21 EPOC Results (4PM) - Mild hypokalemia 3.3 mmol/L, BUN 83 (last value 72), CREA 8.14 (last value 6.42). Blood Typing - Type A PCV/TS 22%/6.0 g/dL.
-Radiographs - hydronephrosis, bilateral ureteroliths, hip dysplasia

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is borderline increased in dimension. The LV is normal in dimension. There is a diffusely hyperechoic endocardium consistent with fibrosis. The papillary muscles are remodeled. Systolic function is intact. The left atrium is severe dilated and bulbous in appearance. No smoke seen in the LA. No obvious mitral regurgitation. The right atrium is severely dilated. The right ventricle appears largely normal. No tricuspid regurgitation. Blood flow through both the LVOT and RVOT are both normal in velocity. Scant pericardial effusion. Small pocket of pleural effusion. No obvious cardiac tumors.

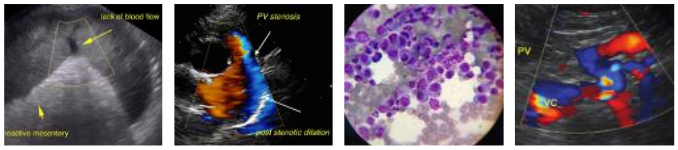
CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	3.9	221	0.6	1.35	0.6	64	93
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE (Swe)** (Abbott)	**LA** 2D short axis Base view (cm) (Abbott)		**LVOT VEL** (m/s)	**RVOT VEL** (m/s)	**E max** (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	2.2	2.2	1.8		2.2	1.1	NM

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*
Adapted from June Boon, Veterinary Echocardiography,1998
Abbott J & MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of biatrial enlargement in the face of borderline LV wall thickness is most consistent with Unclassified Cardiomyopathy (UCM); however, some prior infectious or inflammatory insult to the myocardium cannot be definitively ruled out. There is also significant LV remodeling and



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fibrosis which indicates significant diastolic dysfunction. Regardless of categorical classification, the finding of this degree of atrial dilation likely explains scant pericardial/small volume pleural effusion as congestive heart failure. Even without significant respiratory signs, full cardiac support is recommended as below.

Unfortunately this patient also has the complicating factor of uteroliths and azotemia. Balancing this with CHF is difficult, and a conservative prognosis should be relayed to the owner. Fluid therapy and/or surgery both carry high risk, which should be relayed to the owner. Consider stabilization through lasix therapy for the short term before proceeding.

Prognosis is guarded to poor long term even without reported symptoms. There will always be risk for progression to CHF, malignant arrhythmias, development of blood clots and/or sudden death in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for progression to CHF at home.

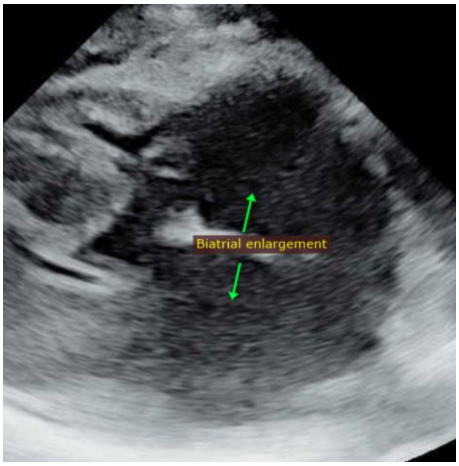
Anesthetic risk is elevated, with high risk for fluid overload, spontaneous CHF, hypotension, etc. The gold standard in this case would be referral to a facility with an anesthesiologist. Extremely judicious IV fluid rates are advised to avoid fluid overload. Drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid ketamine, telazol, acepromazine and dexdomitor. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance.

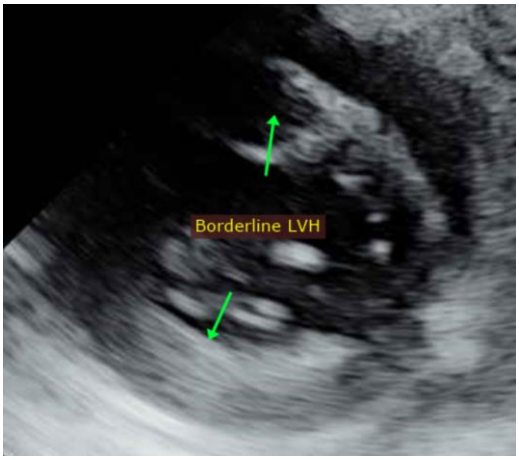
PLAN

Screening BP recommended. Institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges). Administer Pimobendan (off label use) 1.25mg PO q12h. Institute Lasix 1mg/kg q12h. Reassess effusion status in 2-3 days, sooner if any decline in the interim.

A recheck echocardiogram is recommended in 6 months to assess for progression.

IMAGES





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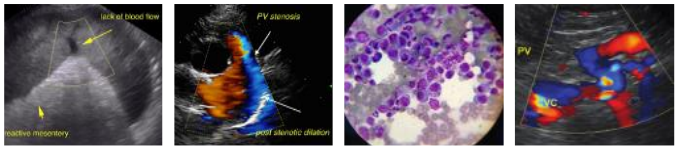

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com